ECONOMIC AND STATISTICAL ANALYSIS
OF SUSTAINABLE DEVELOPMENT INDICATORS OF EU AND UKRAINE COUNTRIES

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The article examines the approaches to assessing sustainable development used in the world, namely: integrated indices or systems of indicators of sustainable development. Data on sustainable development indicators used to assess socio-economic and environmental-economic development of systems and models are presented. Existing systems of sustainable development are considered. It has been studied that in Germany the system of assessing the sustainability of development is an integral part of the program for the implementation of the national strategy for sustainable development and is integrated with the management rules and objectives of the strategy. Each postulate of sustainable development is characterized by one or more indicators, in turn, each indicator corresponds to one specific goal, defined numerically. It is determined that in Ukraine in the process of defining the goals of sustainable development, relevant tasks and indicators for the long term take into account global development guidelines, principles of sustainable development and public opinion on the vision of future development. To this end, the movement forward will be carried out according to the following vectors: vector of development, vector of security, vector of responsibility, vector of pride. Statistical indicators of Ukraine and Germany are considered. Analyzing the economic content of indicators and targets, it can be argued that although these systems have some differences, because the adjustment is made to individual regional characteristics, they have a common focus. The reasons and conditions for the increase of these indicators on the territory of Ukraine are also highlighted: high unemployment, low investment attractiveness, high resource intensity of production, not high indicators of social protection. It is proved that the system of indicators of sustainable development is a tool to improve the welfare of the population not only now but also in the future. Thanks to the powerful database obtained as a result of research in this area, it is possible to make more accurate forecasts and make effective management decisions.

ЕКОНОМІКО-СТАТИСТИЧНИЙ АНАЛІЗ ІНДИКАТОРІВ СТАЛОГО РОЗВИТКУ
КРАЇН ЄВРОСОЮЗУ ТА УКРАЇНИ

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У статті досліджено підходи щодо оцінки сталого розвитку, що використовують у світі, а саме: інтегральні індекси або системи індикаторів сталого розвитку. Наведені дані стосовно індикаторів сталого розвитку, що використовуються для оцінки соціально-економічного і еколого-економічного розвитку систем та моделей. Розглянуто існуючи системи сталого розвитку. Зазначено, що у Німеччині система оцінки сталості розвитку є невід'ємною частиною програми реалізації національної стратегії сталого розвитку та поєднана в єдине ціле з правилами управління та цілями стратегії. Кожний постулат сталого розвитку характеризується одним чи декількома індикаторами, своєю чергою кожний індикатор відповідає одній конкретній цілі, визначеній чисельно. Визначено, що в Україні у процесі визначення цілей сталого розвитку, відповідних завдань та показників на довгострокову перспективу враховують глобальні орієнтири розвитку, принципи сталого розвитку та суспільну думку щодо бачення майбутнього розвитку. Задля цього рух уперед

здійснюватиметься за такими векторами: вектор розвитку, вектор безпеки, вектор відповідальності, вектор гордості. Розглянуто статистичні показники України та Німеччини. Проаналізувавши економічний зміст індикаторів і цілей, можна стверджувати, що хоч ці системи і мають певні відмінності, бо робиться поправка на індивідуальні регіональні особливості, вони мають спільну направленість. Також висвітлено причини і умови збільшення цих показників на території України: високий рівень безробіття, низька інвестиційна привабливість, велика ресурсоємність виробництв, не високі показники соціального захисту населення. Доведено, що система індикаторів сталого розвитку є інструментом покращення добробуту населення не тільки зараз, а й у подальшому. Завдяки потужній базі даних, отриманих в результаті досліджень цього напряму, можна робити більш точні прогнози й приймати ефективні управлінські рішення.

Statement of the problem

Modern economic conditions are characterized by instability of the financial environment and a significant change in management methods to adapt to new environmental conditions, which can be described by the rapid pace of change. Ukraine is going through a difficult period, which is characterized by contradictory processes, namely the impact of both positive reforms and regression components. Crisis phenomena arising in the economy threaten the stable functioning of both individual regions and, above all, the state.

The peculiarities of Ukrainian national and regional policy are due to both historical disparities and the lack of proper attention to regional sustainable development, in the period of not only institutional but also socio-economic transformations in recent years. Despite the fact that many domestic and foreign scientists have made efforts to build the Ukrainian concept of sustainable development – the result of the efforts is currently quite low. Under these conditions, there is a need to develop special approaches to the analysis of the regional economy as a system of interrelated social, political and economic factors. This means that the problems and issues of the region must meet national goals and objectives, but also have an adjustment for territorial features [2].

Now the world, together with it and Ukraine are in an era of radical change, there are social and political changes under the influence of new ideas and views, and in order not only to keep up, but to keep up with the times, countries must make significant efforts.

And the first such step is support for the United Nations General Assembly resolution of 25 September 2015 № 70/1 global sustainable development goals, which is a benchmark for development. It will also be supported by Ukraine, namely the ratification of the Association Agreement between Ukraine, on the one hand, and the European Union, the European Atomic Energy Community and their Member States, on the other hand; and in order to ensure the national interests of Ukraine in sustainable development of the economy, civil society and the state to achieve growth and quality of life, respect for constitutional human rights and freedoms, the President of Ukraine adopted a decree of September 30, 2019 № 722/2019 «On Sustainable Development of Ukraine for the period up to 2030». And the Cabinet of Ministers – Order of August 21, 2019 № 686-r «Issues of data collection to monitor the implementation of sustainable development goals».

The strategy of sustainable development determines the purpose, goal, direction of movement, and priority priorities and indicators of appropriate socio-economic, organizational, political and legal conditions of formation and development of the country.

Thus, the issue of data collection and analysis to monitor the implementation of sustainable development goals is extremely relevant today, it benefits the state and public welfare, and serves to regulate stability on the part of the state, identify key indicators and identify stagnant factors affecting the environment.

Analisis of recent studies and publication

Many works of scientists are devoted to the problems of the goal of sustainable development. Were engaged in the solution of such problems such scientists as Burkinsky B.V., Galushkina T.P., Dolishniy M.I., Kharchenko V.O., Futalo T.V., Martyusheva O.O., Derkach M.I., Ogorodnya E., Gubareva IO., Voitko S.V., Vakhovych I.M., Shkolenko O.B., Zastrozhnikov A.G., Guk O.V. and other. They note that the process of developing strategies for sustainable development of the region has a number of features. The region is not only a subsystem of the socio-economic complex of the country, but also a relatively independent part of it with a complete cycle of reproduction, special forms of manifestation of its stages and specific features of social and economic processes. Sustainable development of the region, on the one hand, can be seen as a positive process of improving the economic, social and environmental components, and on the other – as a process of achieving a balanced state of all these components. The problem of developing methods for collecting and analyzing data on the development of the region is studied systematically, as information is needed to regulate the market of goods and services, provide social protection, improve living standards and competitiveness, administrative management [3].

Objectives of the article

The purpose of the study is to analyze the main problems of data collection to monitor the implementation of sustainable development goals, the state of action and consequences of reforms and identify opportunities to increase compliance with the results of comparison of key indicators.

The main material of the research

The general concept of the Sustainable Development Goals (CSDs, also known as the Global Goals) can be described as the key areas of development of the countries approved by the UN Summit on Sustainable Development. Where they were replaced The Millennium Development Goals (which expired at the end of 2015) were adopted by the CSBs for the period from 2015 to 2030 and which have 17 Global Goals, which in turn include 169 tasks.

The official document regulating them is the UN General Assembly Resolution «Transforming Our World: The 2030 Agenda for Sustainable Development», which aims to bring the world on the path to sustainable and sustainable development.

Ukraine, like other UN member states, has joined the global process of sustainable development. During 2016–2017, a large-scale and comprehensive process of adapting the Sustainable Development Goals to the Ukrainian context continued. It involved representatives of central executive bodies, UN agencies in Ukraine, the National Academy of Sciences of Ukraine, research institutes, NGOs and business, primarily participants in the UN Global Compact in Ukraine (more than 200 experts took part in the discussion). Each global goal has been revised to take into account the specifics of national development. The result of this work was a national system consisting of 86 tasks of national development, which can be divided into four main areas of goals: economic, environmental, social and institutional [1].

The world uses different approaches to assessing sustainability, it can be integrated indices or systems of indicators of sustainable development. Sustainable development indicator systems are being developed by international organizations such as the United Nations and its various agencies, the World Bank, the European Commission, the Environmental Modeling Committee (ISEM), the Organization for Economic Co-operation and Development (OECD), and the Scientific Committee on the Environment. (SCOPE) and others [4].

Creating integrated, aggregate indices of sustainable development is a time-consuming and resource-intensive task. However, the costs in this area are justified and necessary, because the fruits of this activity allow you to quickly model different options for development, with high accuracy to predict their results and choose the best way to solve problems.

The final document of the Summit «Transforming our world: the agenda for sustainable development until 2030» approved the following 17 Sustainable Development Goals [5]:

1. Overcoming poverty.
2. Overcoming hunger, achieving food security, improving nutrition and promoting sustainable agricultural development.
3. Ensuring a healthy lifestyle and promoting well-being for all at all ages.
4. Ensuring comprehensive and equitable quality education and promoting lifelong learning for all.
5. Ensuring gender equality, empowerment of all women and girls.
6. Ensuring accessibility and sustainable management of water resources and sanitation.
7. Ensuring access to low-cost, reliable, sustainable and modern energy sources for all.
8. Promoting progressive, inclusive and sustainable economic growth, full and productive employment and decent work for all.
9. Creating sustainable infrastructure, promoting inclusive and sustainable industrialization and innovation;
10. Reduction of inequality.
11. Ensuring openness, security, sustainability and environmental sustainability of cities and other settlements;
12. Ensuring the transition to rational models of consumption and production.
13. Take urgent measures to combat climate change and its consequences.
14. Conservation and sustainable use of the oceans, seas and marine resources for sustainable development.
15. Protection and restoration of terrestrial ecosystems and promotion of their rational use, rational forest use, combating desertification, stopping and reversing the process of land degradation and stopping the process of biodiversity loss.
16. Promoting a peaceful and open society for sustainable development, ensuring access to justice for all and creating effective, accountable and participatory institutions at all levels.
17. Strengthen the means of implementation and intensify work in the framework of the Global Partnership for Sustainable Development.

The goals should be to integrate efforts for economic growth, the pursuit of social justice and environmental management.

In Germany, the sustainability assessment system is an integral part of the national sustainable development strategy program and is integrated into the governance rules and objectives of the strategy. Each postulate of sustainable development is characterized by one or more indicators, and in turn each indicator corresponds to one specific goal, defined numerically. A total of 38 sustainable development indicators are used, grouped into 4 groups (equality of generations; quality of life; social cohesion; international responsibility) and 21 subgroups [4].

In Ukraine, the process of defining the Sustainable Development Goals, relevant objectives and long-term indicators takes into account global development guidelines, sustainable development principles and public opinion on the vision of future development. The purpose of the Strategy is the introduction of European living standards in Ukraine and Ukraine's leading position in the world [6].

To do this, forward movement should be carried out on the following vectors [7]:

– the vector of development is ensuring sustainable development of the state, carrying out structural reforms and, as a consequence, raising living standards. To do this, first of all, it is necessary to restore macroeconomic stability, ensure sustainable economic growth in an environmentally friendly way, create favorable conditions for economic activity and a transparent tax system;

– security vector – is to ensure the security of the state, business and citizens, security of investment and private property. The key to security must be to ensure fair and impartial justice, the immediate cleansing of the authorities at all levels and the implementation of effective anti-corruption mechanisms. Attention must be paid to the safety of human life and health, which is impossible without effective medicine, protection of socially vulnerable groups, safe environment and access to quality drinking water, safe food and industrial goods;

– the vector of responsibility is to ensure that every citizen, regardless of race, color, political, religious or other beliefs, gender, ethnic and social origin, property status, place of residence, language or other characteristics, will have access to high quality education, health care systems and other services in the public and private sectors;

– the vector of pride is the provision of mutual respect and tolerance in society, pride in one's own state, its history, culture, science, sports.

Analyzing the economic content of indicators and goals, we can say that although these systems have some differences, because the adjustment is made to individual regional characteristics, they have a common focus. This can be seen in the main statistics of the two countries (Table 1).

Comparing the indicators of development indicators, we see that in many respects Ukraine lags behind a country like Germany. We can trace such socio-economic phenomena as high unemployment, low investment attractiveness, high resource intensity of production, not high rates of social protection. We see that even with such limited data, certain conclusions can already be drawn about the general state of the country, which shows the effectiveness of such a system of indicators.

Table 1 – The main goals of sustainable development and statistical indicators that describe them [8; 9; 10; 11]

Ukraine				Germany			
Goal 1. Overcoming poverty							
Objective: to reduce poverty, in particular by eliminating its extreme forms							
Indicator: Proportion of persons whose daily consumption is less than 5.05 US dollars per PKS,%							
2015	2016	2017	2018	2015	2016	2017	2018
2,4	2	1,9	1,8	0,2	0,5	–	–
Goal 2. Overcoming hunger, agricultural development							
Objective: to reduce the volatility of food prices							
Indicator: Consumer price index for food, %							
May 2021	June 2021	July 2021	August 2021	May 2021	June 2021	July 2021	August 2021
101,3	100,2	100,1	99,8	108,7	109,1	109,7	109,8
Goal 3. Good health and well-being							
Objective: To reduce the prevalence of smoking among the population with the use of innovative means of informing about the negative effects of smoking							
Indicator: Proportion of smokers among women over 15,%							
2017		2020		2017		2020	
5,2		5,6		22		22	
Indicator: Proportion of smokers among men aged 16-29,%							
2017		2020		2017		2020	
28,9		25,1		30		28	
Objective: To reduce the level of serious injuries and deaths due to road accidents, including through the use of innovative practices of resuscitation, treatment and rehabilitation of victims of road accidents							
Indicator: Accident mortality per million inhabitants							
2016	2017	2018	2019	2016	2017	2018	2019
79.9	83.3	80.6	82.2	38.9	38.5	39.5	36.7
Goal 4. Quality education							
Objective: To eliminate gender inequality among school teachers							
Indicator: Share of men among teachers, %				Indicator: Gender parity index for participation in organized learning			
2016		2017		2016		2017	
14,41		14,32		0,99		0,99	
Goal 5. Gender equality							
Objective: To ensure equal opportunities for representation at higher levels of decision-making in political and social life							
Indicator: Proportion of seats held by women in national parliaments, %							
2017	2018	2019	2020	2017	2018	2019	2020
12,29	12,29	11,58	20,8	36,98	30,75	30,89	31,17
Indicator: Proportion of women in management positions, %							
2015	2016	2017	2018	2015	2016	2017	2018
39,57	40,87	41,06	40,43	29,29	29,29	29,21	29,39
Goal 6. Clean water and proper sanitation							
Objective: Ensuring the availability and sustainable management of water resources and sanitation							
Indicator: Proportion of population using safe sanitation services,%							

Ending of Table 1

Ukraine				Germany			
2014	2015	2016	2017	2014	2015	2016	2017
61,64	63,9	66,18	68,45	97,1	97,22	97,23	97,23
Indicator: Water efficiency (USD per cubic meter)							
2014	2015	2016	2017	2014	2015	2016	2017
6,8	6,89	6,93	7,75	118,21	122,0	126,52	129,17
Goal 7. Available and clean energy							
Objective: To increase the share of energy from renewable sources in the national energy balance							
Indicator: Share of renewable energy sources in total final energy consumption, %							
2014	2015	2016	2017	2014	2015	2016	2017
3,5	4,14	5,47	6,47	13,38	14,21	14,15	15,25
Goal 8. Decent work and economic growth							
Objective: To ensure sustainable GDP growth							
Indicator: Annual real GDP growth rate per employee, %							
2015	2016	2017	2018	2015	2016	2017	2018
-9,8	3,7	3,5	3,4	0,7	0,6	1,2	0,4
Objective: To increase employment							
Indicator: Unemployment rate, %							
2015	2016	2017	2018	2015	2016	2017	2018
9,14	9,35	9,51	8,8	4,62	4,12	3,75	3,38
Objective: To promote reliable and safe working conditions for all employees							
Indicator: Fatal occupational injuries among workers (per 100,000 workers)							
2012	2013	2014	2015	2012	2013	2014	2015
5,68	5,02	4,3	4	1,19	0,99	1,1	0,97
Goal 9. Industry, innovation and infrastructure							
Objective: To promote the accelerated development of high- and medium-high-tech sectors of the processing industry							
Indicator: Share of value added in manufacturing to GDP, %							
2015	2016	2017	2018	2015	2016	2017	2018
11,9	12,05	12,34	12,42	20,67	21,15	21,26	21,21
Goal 10. Reduce inequality							
Objective: To ensure the accelerated growth of incomes of the poorest 40% of the population							
Indicator: Proportion of people living below 50 percent of average income,%							
2013	2014	2015	2016	2013	2014	2015	2016
5	4	5	5	10	-	11	12
Goal 12. Responsible consumption and production							
Objective: To reduce the resource intensity of the economy							
Indicator: Total domestic consumption of materials per unit of GDP (kilograms to constant dollars in 2010)							
2014	2015	2016	2017	2014	2015	2016	2017
3,94	4,37	4,36	4,34	0,33	0,33	0,32	0,31
Goal 17. Partnership for sustainable development							
Objective: To mobilize additional financial resources based on investment incentives for foreign and domestic investors							
Indicator: Foreign direct investment inflow (FDI) (million USD)							
2015	2016	2017	2018	2015	2016	2017	2018
2961	3284	2601	2335	41443	23500	36931	25706

Conclusions

The concept of sustainable development has many definitions. One of them, in our opinion, best describes this concept. In one of its reports, the Brundtland Commission put it this way: «sustainable development is development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs» [12].

Therefore, the system of indicators of sustainable development is a tool to improve the welfare of the population not only now but also in the future. Thanks to the powerful database obtained as a result of research in this area, it is possible to make more accurate forecasts and make effective management decisions.

A large number of countries are adopting and beginning to implement this method of development, but there are many countries that are not interested in sustainable development and do not accept it, which poses a threat to their neighbors and partners. This is not surprising, because such statistical studies require a lot of time and resources. But it should be added that, as mentioned above, such investments pay off later.

Therefore, countries that do not have their own methodological framework should adopt foreign experience, such as Germany, for future generations, in order to avoid economic, social and environmental crisis in the context of globalization.

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